

Title (en)  
NOVEL, SHARPENERS TO CREATE GROSS-GRIND KNIFE EDGES

Title (de)  
NEUE SCHÄRFER ZUR HERSTELLUNG RUNDGESCHLIFFENER MESSERSCHNEIDEN

Title (fr)  
NOUVEAUX AFFÛTEURS POUR CRÉER DES TRANCHANTS À ENTAILLES TRANSVERSALES

Publication  
**EP 2461940 A4 20130717 (EN)**

Application  
**EP 10806942 A 20100729**

Priority  
• US 23206509 P 20090807  
• US 2010043654 W 20100729

Abstract (en)  
[origin: US2011034111A1] A sharpener for creating cross-grind knife edges includes a nominally flat annular abrasive sharpening member which could be a ring or a disk and is rotated about its center and held against a moving knife edge facet to simultaneously and sequentially abrade the knife edge at multiple locations on the abrasive member. The disk may be slidably mounted on a shaft in opposition to a spring restraining force. The disk is nominally disposed in a vertical orientation. The sharpener may include multiple stages including a manual stage having a pair of off axis conical shaped rotatable abrasive coated disks which have abrading lines on opposing facets which are not parallel but cross and intersect in a crossing pattern at the blade edge.

IPC 8 full level  
**B24B 3/54** (2006.01)

CPC (source: EP US)  
**B24B 3/54** (2013.01 - EP US)

Citation (search report)  
• [X] US 2008261494 A1 20081023 - FRIEL DANIEL D [US], et al  
• See references of WO 2011017185A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)  
**US 2011034111 A1 20110210; US 8043143 B2 20111025;** CA 2770279 A1 20110210; CA 2770279 C 20161213; CA 2940255 A1 20110210; CA 2940255 C 20190108; CN 102481676 A 20120530; CN 102481676 B 20150408; EP 2461940 A1 20120613; EP 2461940 A4 20130717; EP 2461940 B1 20140910; HK 1171414 A1 20130328; JP 2013501632 A 20130117; JP 5629773 B2 20141126; WO 2011017185 A1 20110210

DOCDB simple family (application)  
**US 84596110 A 20100729;** CA 2770279 A 20100729; CA 2940255 A 20100729; CN 201080039546 A 20100729; EP 10806942 A 20100729; HK 12112382 A 20121130; JP 2012523657 A 20100729; US 2010043654 W 20100729